NCDOT CONCEPTUAL CONSTRUCTION COST ESTIMATION GUIDELINES

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

ROADWAY DESIGN UNIT

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Conceptual Construction Cost Estimation Guidelines

Section I How to estimate quantities for the Conceptual Construction Cost Estimate

Construction cost estimating can be defined as the projected or forecasted construction cost of a program, project, or operation. Cost estimation is the process by which, based on information available at a specific phase of project development, the ultimate cost of the project can be estimated. Construction estimates are an important part of the design process and help management place projects in the fiscal year they anticipate funding availability.

To place projects in the appropriate fiscal year, both realistic schedules and accurate estimates are needed. An accurate cost estimate is critical to preventing cost overruns and scheduling delays for a project.

Conceptual Construction Cost Estimation Process Overview:

The Engineer and the Estimating Section in Contract Standards and Development can prepare and process construction cost estimates at any stage of the plan development process. The following guidelines focus primarily on estimates prepared in the Project Initiation Stage (Stage 1) of the NCDOT Project Delivery Network (PDN) and much of the guidance will be relevant to projects being developed by the Division Corridor Development Engineers and the Feasibility Studies Unit but will also be helpful for anyone preparing a conceptual construction cost estimate.

In the Project Initiation Stage, a Conceptual Construction Estimate is prepared as part of the express design. See activity **1CS1** (Prepare Conceptual Construction Estimate) in the PDN for more detailed information on the process. It is desirable that the estimate be updated every two years. The Feasibility Studies Unit Manager, Corridor Development Unit Manager, or Project Manager (if applicable) will determine how often the estimate will need to be updated. The conceptual estimate may also need to be updated for project scoping and for the value engineering study in the Project Initiation Stage.

Conceptual Construction Cost Estimation:

The engineer should assess which pay items should be included in the cost estimate. **It is imperative that the engineer recognize all the major pay items that may be associated with their project**. The pay item categories and pay items listed in Section I are typical for most highway construction projects, but the estimator will need to make the final determination on whether the pay item is applicable to the project or not. The engineer may also need to add pay items that are unique to his or her project that are not referenced in this document.

There are five basic steps in preparing an accurate construction cost estimate.

1. Reviewing the conceptual design for accuracy and completeness.
2. Identifying the pay items that are applicable to your design.
3. Estimating the quantities of the identified pay items.
4. Completing the construction estimate form.
5. Checking the construction estimate form for accuracy and completeness.

Step 1:

Prior to preparing a conceptual construction estimate it is critical that the engineer check the conceptual design to ensure the design meets AASHTO and NCDOT policies and guidelines. See PDN activity **1RD1** for additional information related to the Initiation of Roadway Coordination during the Express Design. The design criteria can significantly affect the construction cost and footprint of the proposed project. The following is a brief list of elements that should be checked prior to beginning the estimating process:

- Design Criteria
  - Confirm that the appropriate functional classification and context has been selected.
  - Check all elements related to the typical section.
    - Lane Widths
    - Shoulder Widths or Berm Widths
    - Median Widths
    - Is curb and gutter needed? If so, is sidewalk needed?
    - Is guardrail warranted? Guardrail affects shoulder width.
  - Design Speed
  - Superelevation
  - Minimum Horizontal Radius
  - Vertical Curves
    - Maximum and minimum vertical grade
    - K factors

- Constructability
    - A maintenance of traffic narrative should be developed.
        - Can an offsite detour be used to maintain traffic?
        - Are onsite detours or phased construction of structures needed to maintain traffic?
        - Does the project have excessive fill and cut sections?
- Other Considerations
    - Property Access
        - Are service roads needed for property access?
    - Is the project within 10 miles of an airport?
        - FAA Coordination may be required.
    - Retaining and Noise Walls

The engineer should also identify whether there is an airport within 10 miles of the proposed project and coordinate with the Aviation Division. Federal Aviation Administration (FAA) coordination may be required. There may also be design restrictions and constraints for projects located near an airport. Projects constructed near an airport may impact the grade elevations and vertical alignments. NCDOT guidelines regarding FAA Coordination can be found here.

Steps 2 and 3:

Once the design has been thoroughly checked, the engineer can then begin identifying the applicable pay item categories that will be included in the estimate. After the categories and associated pay items are identified, the pay item quantities can then be estimated.

Pay items (also sometimes referred to as bid items) reflect the work being done on a project. All work done on a project must be covered by a pay item or be incidental to a pay item. This includes preparing estimates for conceptual design. For example, Asphalt or Portland Cement Concrete bid items indicate what type pavement is being specified in the plans. The Borrow Excavation and Unclassified Excavation bid items indicate the material that is needed to construct the embankment or needs to be excavated within the project limits. Please be aware that the units specified for various pay items on a conceptual estimate may vary from those specified on the Final Construction Estimate.

The following will outline the common pay item categories and pay items that are typically included in conceptual construction estimates.

1. Clearing and Grubbing

"Clearing" is defined as the cutting, removal and satisfactory disposal of all wooded vegetation, and debris. "Grubbing" is defined as the complete removal and satisfactory disposal of all grassy vegetative matter, root mat, ball and root, topsoil material high in organic content, and surface debris. See Section 200 (Clearing and Grubbing) in the 2018 Standard Specifications for Roads and Structures for more detailed information regarding Clearing and Grubbing.

Calculate the area of Clearing and Grubbing (in ACRES) within the proposed right of way. Wooded areas only.

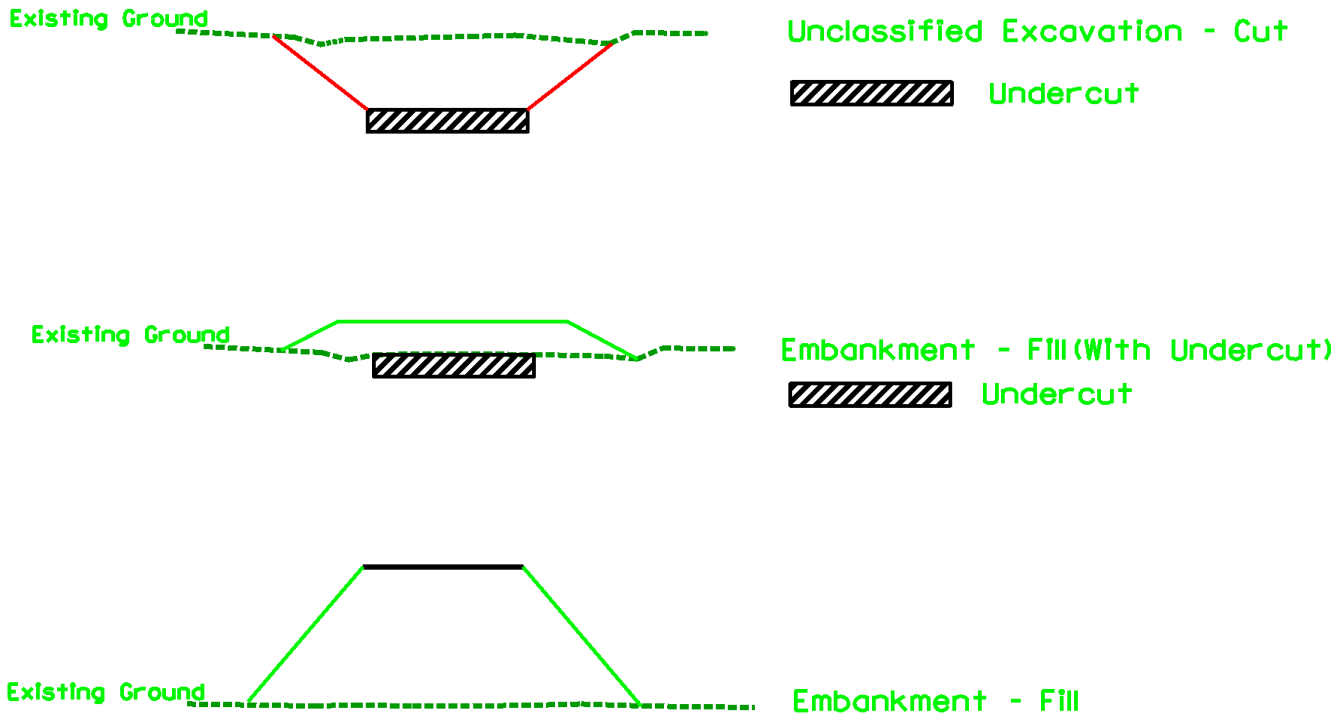
2. Earthwork

The Earthwork category is comprised of three primary pay items, Unclassified Excavation, Borrow Excavation and Undercut Excavation. All earthwork quantities are volume calculations in Cubic Yards.

- **Unclassified Excavation** is defined as the excavation of all materials, including rock materials, within the project limits. Suitable Unclassified Excavation can typically be incorporated back into the project to construct the embankment if recommended by the Geotechnical Engineering Unit. See Section 225 of the NCDOT Standard Specifications for Roads and Structures.

- **Borrow Excavation** is defined as suitable material, obtained from sources outside the project limits, that is used to construct the embankment. See Section 230 of the NCDOT Standard Specifications for Roads and Structures.

- **Undercut Excavation** is defined as unsuitable excavation of materials within the project limits and occurs when the natural soil materials below the subgrade are deemed undesirable. Undercut Excavation can occur in both cut and fill areas. Undercut Excavation is typically "wasted" and hauled away from the project. The waste material from Undercut Excavation is typically not used to construct embankments. See Section 225 of the NCDOT Standard Specifications for Roads and Structures. When undercut excavation is included in the construction estimate, also include an equivalent quantity of **Select Granular Material** (in Cubic Yards) in the estimate.



It is preferred that the individual pay items for Unclassified Excavation, Borrow Excavation and Undercut Excavation be included in the cost estimate.

If wetland boundaries are known, Undercut Excavation can be estimated by calculating the wetland areas (in square feet) from shoulder point to shoulder point and multiplying this area by 3 feet. You can then divide this cubic foot volume by 27 to convert from cubic feet to cubic yards. Do not forget to add an equal quantity of Select Granular Material (in cubic yards) to the estimate to backfill the Undercut.

Earthwork quantities are typically major pay items that comprise a significant percentage of the total cost of a project. It is important to confirm that your earthwork quantities are accurate and reasonable. The estimated Earthwork quantities should be increased by 10% on the construction estimate form.

Please inform the estimator if "rock" is anticipated within the project limits. The presence of rock will affect the unit price of the Unclassified Excavation.

If on-site detours or temporary widening is needed to maintain traffic during construction, the engineer should include estimated earthwork quantities for this work. Cost estimates for temporary on-site detours typically include Borrow Excavation to construct the detour as well as Unclassified Excavation to remove the detour. Reference these quantities as "On-Site Detour" or "Temporary Widening" on the conceptual cost estimate form.

When specifying Grading Lump Sum, you will need to complete a lump sum grading calculation sheet (EXCEL) and provide a copy with your estimate submittal. See Section 226 (See Comprehensive Grading) in the 2018 Standard Specifications for Roads and Structures.

3. Removal of Existing Pavement

Pavement removal involves the breakup, removal, and satisfactory disposal of any Portland cement concrete or asphalt components of any existing roadway pavement structure, including paved shoulders.

At the conceptual design phase, estimate the quantity of pavement removal for all existing pavement located below subgrade that will not be overlaid with proposed asphalt pavement. A general rule of thumb would be to consider pavement overlay if the existing pavement is within 3 inches from the proposed subgrade. See Section 250 (Removal of Existing Pavement) in the 2018 Standard Specifications for Roads and Structures for additional information regarding pavement removal.

Calculate the estimated area of Asphalt Pavement Removal and/or Concrete Pavement Removal (in Square Yards) within the project limits. You will also need to include a quantity of Removal of Existing Pavement for any temporary pavement that is needed for the maintenance of traffic.

4. Drainage

The drainage category is intended to cover any drainage pipe, masonry drainage structures, grates and frames, drainage ditch excavation, or any other drainage related item that may be needed to construct the project.

Calculate the length of Drainage (in Miles) for each type of typical section (4-Lane Divided w/ Raised Median, 2-Lane Shoulder, Flyovers, Ramps, Loops, etc.). Indicate whether the length in miles is for new location or widening of existing and whether the typical section is a curb and gutter or shoulder typical.

For Example: The estimate might have a length of drainage for a 4-Lane Divided Facility with 70-foot median (new location), a length for a 4-Lane Divided Facility with 30-foot raised median (widening of existing 2-Lane, curb & gutter), a length of drainage for loops (new location), and a length of drainage for ramps (new location).

5. Subgrade Stabilization

Subgrade Stabilization typically involves the mixing lime or cement with the existing soil to increase the subgrades weight bearing capabilities, tensile strength, and overall performance. Subgrade Stabilization can also involve adding 8”-12” of Class IV Subgrade Stabilization (Aggregate Subgrade).

Subgrade Stabilization is typically limited to new location projects in the Piedmont and western counties of the state. Subgrade Stabilization is typically not needed on widening projects except for facilities to be upgraded from a two-lane roadway to a multi-lane divided. Do not include quantities for Subgrade Stabilization when the proposed widening is less than 6 feet in width. See Sections 501 and 540 in the 2018 Standard Specifications for Roads and Structures for more detailed information related to Subgrade Stabilization.

Calculate the area of Subgrade Stabilization (in Square Yards) using the proposed pavement width plus one foot on each side for a shoulder typical section or one foot beyond the back of curb for a curb and gutter typical section. For conceptual construction estimates, you can use your Pavement Widening and New Pavement areas on shoulder sections for simplicity.

6. Fine Grading

Fine grading involves the preparation, grading, shaping, manipulating moisture content, and compacting either an unstabilized or stabilized roadbed to a condition suitable for the placement of base course, pavement, and shoulders. See Section 500 of the NCDOT Standard Specifications for Roads and Structures.

To estimate the Fine Grading quantity for conceptual construction estimates, calculate the area (in Square Yards) for the proposed new pavement, which includes mainline, widening, and paved shoulders.

The full depth pavement areas in square yards can be used to estimate the Fine Grading quantity. The area calculation should be based on the length times the edge of pavement to edge of pavement width, excluding any existing pavement.

7. Pavement

The Pavement category includes all proposed asphalt and concrete pavement structures within the proposed project.

Calculate the Pavement area (in Square Yards) for each type of pavement (Asphalt or Concrete). A variety of pavement pay items may need to be included on the conceptual construction cost estimate form. The following list outlines the different types of pavement quantities that may be required in a conceptual construction cost estimate:

- Pavement Widening
    - Asphalt
    - Concrete [not common]
- New Pavement
    - Asphalt
    - Concrete
- Resurfacing Existing Pavement
    - Asphalt
- Temporary Pavement (for temporary widening and on-site detours)
    - Temporary Pavement
        - Asphalt
    - Temporary Pavement Widening
        - Asphalt
- Full Depth Paved Shoulder
- Asphalt Wedging (per Square Yard) [needed if you are not specifying a resurfacing grade]
    - Provide an average wedging depth if known

When calculating the pavement quantities, care must be taken to differentiate between full depth pavement (widening and/or new pavement) and the resurfacing of the existing pavement.

Temporary pavement quantities should also be included when on-site detours or temporary pavement widening is needed to maintain traffic during construction. You will also need to include a quantity of Removal of Existing Pavement for any temporary pavement that is needed for the maintenance of traffic.

Pavement quantities are typically a major pay item that comprises a significant percentage of the total cost of a project. The estimated pavement quantities should be increased by 10% on the conceptual construction estimate.

8. Concrete Curb and Gutter

Calculate the length of Concrete Curb and Gutter (in Linear Foot) for each type of curb and gutter proposed on the Mainline (-L-), Y-Lines, Flyovers, Ramps, Loops, etc. The following list outlines the types of curb and gutter that are typically included in a conceptual construction estimate:

- 2′-6″ Concrete Curb & Gutter (per Linear Foot)
- 1′-6″ Concrete Curb & Gutter (per Linear Foot)

For example: On a proposed curb and gutter facility with a 30-foot raised median, the estimate should include quantities for both 2′-6″ Concrete Curb & Gutter and 1′-6″ Concrete Curb & Gutter that are approximately two times the project length.

9. Sidewalk/Sidepaths/Curb Ramps

Calculate the area (in Square Yards) for any sidewalk or sidepaths based on the length times the width. Standard 4″ Concrete Sidewalk is 5 feet wide and a typical paved sidepath is 10 feet wide, but a project can have sidewalk with a width greater than 5 feet.

The number of proposed curb ramps will also need to be estimated. On curb and gutter facilities with sidewalk, the number of curb ramps (per Each) can typically be estimated by multiplying the total number of intersection radii by a factor of 2. For example, a four-legged intersection would have four radii with a total of 8 curb ramps. A three-legged intersection would have an estimated 6 curb ramps. See Roadway Standard Drawings 848.05 and 848.06 for more specific information regarding the placement of curb ramps at intersections.

The following list outlines the pay items that are typically provided in a conceptual construction estimate:

- 4″ Concrete Sidewalk (per Square Yard)
- 10′ Sidepath (per Square Yard) – typically asphalt pavement.
- Concrete Curb Ramps (per Each)

10. Monolithic Concrete Islands

Monolithic concrete islands (also referred to as channelizing islands) help control and direct traffic movements into their proper paths and are an important part of intersection design. Monolithic concrete islands are required at all reduced conflict intersections.

Calculate the area (in Square Yards) for any concrete monolithic island based on the length times the width.

Note: The minimum and maximum widths of a Monolithic Concrete Islands are 4 feet and 16 feet, respectively.

11. Guardrail, Guiderail, and Concrete Barrier

Guardrail, Guiderail, and Concrete Barrier are longitudinal roadside barriers used to shield motorists from natural or man-made obstacles located along either side of the traveled way. It is important to identify guardrail warrants since the presence of guardrail will affect the shoulder width and the footprint of the project.

Estimate the length of guardrail, guiderail, or concrete median barrier (in Linear Foot) at bridge locations, fill warrants, rigid obstacles, and median locations.

Bridge Warrants:

- Single Bridge on Two Lane – Two Way facility:
- Multi-Lane Bridge on Divided Freeway/Arterial facility:

Fill Warrants:

- Please reference Chapter 3 in Part I of Roadway Design Manual and the most current Roadside Design Guide for additional guidance regarding the design and placement of guardrail and cable guiderail.
- Remember to add three feet to your shoulder widths when guardrail is warranted. Guardrail can affect the construction limits and increase right of way impacts.

Water Hazards:

- Streams or permanent bodies of water more than 2 feet in depth.

Rigid Obstacles:

- Calculate the quantity of guardrail needed to protect rigid obstacles (bridge piers, sign supports, box culverts, pipes greater than 48 inches in diameter).

Median Locations:

- Incorporate median guardrail/guiderail on all freeway projects with median widths of 70 feet or less.
    - 36-foot Median or less: Typically use two rows of guardrail. The use of median barrier is also an option if the median width is less than 31-feet.
    - 46-foot Median to 70-foot Median: One line of cable guiderail.

The engineer is also required to calculate the number of guardrail end units and structural anchor units (per Each). Guardrail End Units protect the ends of the steel beam guardrail and structural anchor units are needed to attach guardrail to the bridge. There are typically four structural anchor units and four guardrail end units per bridge but may vary due to site conditions and engineering judgement.

See Standard Drawings 862.01, 862.02, and 862.03 of the NCDOT 2018 Roadway Standard Drawings for additional information on guardrail placement and installation. See Standard Drawing 865.01 for additional information on cable guiderail placement.

The following list outlines the pay items that are typically provided in a conceptual construction estimate:

- Steel BM Guardrail (per Linear Foot)
- Cable Guiderail (per Linear Foot)
- Concrete Median Barrier (per Linear Foot)
- Guardrail End Units (per Each)
- Guardrail Structural Anchor Units (per Each)

12. Fencing

Assume fencing along the right of way (on both sides of the facility) on full control of access, limited control of access and partial control of access projects, or to replace any existing fence that is present within the project limits. See Facility Type & Control of Access Definitions for more detailed information related to facility types and control of access.

Calculate the length of Fence (in Linear Foot). Woven wire is commonly specified in rural areas and chain link fence in urban. A list of commonly used fencing pay items is as follows:

- 47" Woven Wire Fence (per Linear Foot) [should be specified on rural projects]
- 48" Chain Link Fence (per Linear Foot) [should be specified on urban projects]

13. Railroad Crossings

Calculate the number of new railroad signals with or without gates (per Each) and the length of railroad crossings (per Linear Foot). Assume for all at grade railroad crossings. The engineer shall coordinate with the NCDOT Rail Division when railroads are present within the project limits. See PDN activity **1RR1** (Identify Railroad Impacts) for addition information regarding the determination of railroad impacts.

A list of commonly used railroad crossing pay items is as follows:

- RR Signal wo gates (per Each)
- RR Signal with gates (per Each)
- Concrete Railroad Crossing Surface (per Linear Foot)

14. Interchange Signing

Interchange signing (also referred to as Overhead Sign Assemblies) are guide signs that are common at all interchanges.

Provide the number of each type of Interchange that will require signing (per Each). A list of common interchange configurations is as follows:

- Diamond
- Single Point Diamond Interchange
- Partial Cloverleaf
- Full Cloverleaf
- Trumpet
- Three-Leg Directional
- Diverging Diamond
- All-Directional (with flyovers)

Please note that this Interchange Signing pay item category can also be used for any overhead sign structure that is not related to an interchange. List as "Overhead Sign Structure" on the estimate form when this applies.

15. Traffic Management

Traffic Management (also commonly referred to as Traffic Control) encompasses the implementation of traffic management plans on the project. Traffic Management can include, but is not limited to the following: flagging, lane closures, detours, pedestrian access, and sidewalk closures.

Calculate the length (per Mile) for each type of typical section. You can use the lengths calculated for your Drainage pay item to estimate the traffic control quantities. Indicate whether the length is for new location or widening of an existing facility. Also specify if you are proposing an offsite detour, on-site detour, or phased construction.

Evaluate your design to account for the maintenance of traffic. Temporary on-site detours with temporary structures may be needed. On-site detours can increase your clearing & grubbing, earthwork, removal of existing pavement, drainage, fine grading, pavement, guardrail, pavement marking, erosion control, and structure quantities.

A maintenance of traffic narrative is typically a requirement for express design. For projects with complex traffic phasing, it is recommended that the engineer contact their Regional WZTC Engineer for guidance on maintaining traffic during construction. See PDN activity **1TO1** (Initiate Traffic Systems Operations Scoping) for additional guidance on work zones.

16. Pavement Markings

Pavement markings are used on paved roadways to provide guidance and information to drivers and pedestrians. The pavement marking category is intended to cover the thermoplastic pavement markings, cold-applied pavement markings, paint pavement markings, polyurea pavement markings, and pavement markers that may be needed on the project.

Calculate the length of pavement markings (per Mile) for each type of typical section. You can use the lengths calculated for your Drainage pay item to estimate the pavement marking quantities.

17. Erosion Control

Erosion Control is needed to control soil erosion and sediment during construction. The erosion control category will cover any erosion control measures (silt fence, silt excavation, seeding and mulching, wattles, etc.) that may be needed during construction.

Calculate the area (in Acres) within the right of way minus the pavement area.

18. Traffic Signals and ITS

Estimate the number of intersections (per Each) that will require upgraded traffic signals, new traffic signals or the removal of existing traffic signals.

Intelligent Transportation Systems (Lump Sum) should also be included on the estimate when applicable. Contact Traffic Systems Operations for guidance related to Intelligent Transportation Systems. See PDN activity **1TO1** (Initiate Traffic Systems Operations Scoping) for additional guidance on identifying ITS and Signal system upgrades.

19. Structures (Bridges)

Structure quantities can include roadway bridges, railroad bridges, temporary bridges, temporary work bridges, and the removal of the existing bridge. See PDN activity **1ST1** (Initiate Structures Investigation) for additional guidance related to structures during the Express Design.

Calculate the bridge area (in Square Feet) based on the estimated length and width of the proposed bridge. Indicate whether the bridge is to be phase constructed, if the bridge is in a horizontal curve, over a railroad track, or over water.

In addition to the square foot area for the proposed bridge, each bridge will require additional pay items for an "Approach Slab" and "Bridge Approach Fill".

The approach slab quantity can be calculated by multiplying the bridge width by 50 feet (2 x 25-foot approach slabs at either end of the bridge). The area of the Approach Slab should be calculated in Square Feet.

A Bridge Approach Fill pay item (Lump Sum) will also need to be included for each proposed bridge. For example, if there are three proposed bridges, the quantity of Bridge Approach Fills will be 3 Lump Sum.

Structures (both Bridges and Reinforced Concrete Box Culverts) are considered major pay items that comprise a significant percentage of the total cost of a project. Care should be given when estimating their quantities.

20. Structures (Reinforced Concrete Box Culverts)

Calculate the length of the box culvert or box culvert extension (per Linear Foot). If known, calculate the length in feet, and reference the number of barrels (1, 2, 3, etc.), and size of the culvert (WxH: 10'x10', 12'x12', etc.). Do not forget to include any earthwork, paving, and guardrail pay items that will be needed with a culvert installation.

The following list provides examples for a new reinforced box culvert, culvert extension, and removal of existing box culvert:

- 3@12'x12'- (New)
- 3@10'x10'- (Extension)
- Removal of Existing 3@12'x12' RCBC

21. Miscellaneous Pay Items

The following are some unique pay items that could be applicable on some projects:

- **Retaining Walls and Noise Walls:** Retaining Walls may be needed to minimize impacts in cuts and fill and Noise Walls may be required to reduce noise impacts to adjacent properties. Estimate the surface area of the proposed retaining or noise wall (in Square Feet). This area should be based on the average height between the top and bottom of the proposed wall.

  The following list provides example pay items for Retaining and Noise Walls:

  - Retaining Wall (per Square Foot)
  - Noise Wall (per Square Foot)

- **Water and Sewer Lines** may be impacted by the proposed project. It is important to identify whether water and sewer lines are present within the limits of the project and to evaluate any potential impacts. It is recommended that you contact the NCDOT Utilities Unit Business Officer when developing any utility estimate when you have identified a significant amount of utility impacts. Only wet utilities (Water and Sewer) should be included in the construction estimate.

  The following list provides examples for the relocation of existing water and sewer lines:

  - Relocate Existing Water Line (?" Diameter) per Linear Foot
  - Relocate Existing Sewer Line (?" Diameter) per Linear Foot

The engineer should also identify any other unique "high cost" pay items that are specific to their project. Some examples of unique pay items include, but are not limited to the following:

- Sewer Pump Stations (per Each)
- Roadway Lighting (Lump Sum)
  - Existing Lighting within the project limits.
  - Construction of a new or modification of an existing interchange in Urban Areas.
- Slope Stabilization (in Square Yards) if using slopes steeper than 2:1 or 2:1 slopes east of I-95. It is recommended that you consult with your Geotechnical Regional Office. Some of the standard types of slope stabilization are listed below:
  - Rock Plating
  - Reinforced Soil Slopes (1.5:1 slope)
- __" Milling Asphalt Pavement (in Square Yards)
- Property access has been evaluated to determine whether service roads are needed.
  - Include pay items associated with service roads.

Section II How to fill out a Construction Estimate Form

Once you have identified and estimated the quantities, you will need to fill out a construction estimate form. The estimate form can be downloaded from the link below:

1. Construction Cost Estimate Forms.xls
    a. Traditional estimate form.

The following process outlines the recommended steps that can be used to fill out the construction estimate form:

1. Enter all applicable project information at the top of the form.
2. Enter the quantities for each identified pay item into the form template.
    a. Confirm that you are specifying the correct units for each pay item.
    b. Be careful not to modify any of the formulas that are embedded in the spreadsheet.
3. Price information:
    a. When submitting the estimate to the Estimating Section in the Contract Standards and Development Unit, leave the unit prices blank.
    b. For estimates prepared at the Division level, you can enter the appropriate unit prices using actual or historic data. The most important factors in obtaining a good engineer's estimate is the experience level of the estimator and selecting the appropriate unit pricing. Be cautious when entering unit pricing.
    c. The unit pricing on remote coastal and mountainous projects tend to be higher due to limited contractors, limited local resources/suppliers, and longer hauling distances.
    d. Smaller projects also have much higher unit costs than larger projects.
    e. Changes in Scope can significantly affect the construction cost. It is important that your conceptual designs adequately denote the construction limits.
4. Check the estimate form for accuracy and completeness.
    a. Confirm that quantities are reasonable.
    b. Confirm that quantities are using the correct units.
5. Remove any unused/non-applicable pay items by deleting the row from the Excel file.

Section III Estimate Submittal Process

The estimate can be submitted to the Project Manager or representative once the estimate form has been completed and checked. The following information should be included with the estimate submittal.

- Completed Construction Cost Estimate Form
- Conceptual Design Plans
    - Conceptual plans:
        - PDF of Typical Sections (required)
        - PDF Roll Plots or Plans (desirable – if available)
- Document your design decisions when selecting pay items and estimating quantities.
- Provide a Maintenance of Traffic Narrative (when applicable)
    - Off-site detours, on-site detours, phased construction, staged construction for proposed bridges, etc.

The Project Manager will decide whether to submit the estimate form and conceptual design information to the Estimating Section in Contract Standards and Development. Cost verification letters can be requested at any estimate phase.

Section IV Example Construction Estimate Forms

Section IV contains some examples of completed conceptual construction estimate forms. Please note that the descriptions of the pay items vary slightly from one form to another. Minor variations in the descriptions of the pay item are acceptable if you follow the rules outlined in Section I of these guidelines.

North Carolina Department of Transportation
Preliminary Estimate

TIP No. **H170784/R-5881 ALT 3** **FEASIBILITY** County: **JACKSON**
Route **US-64**

From **NC-107 to Pebble Creek Rd**
Typical Section WIDEN FROM 2 TO 3 LANES, ADD ROUNDABOUT

CONSTR. COST
$6,200,000

Prepared By: Atkins Date 3/1/2019
Requested By: NCDOT Date 5/16/2019
Priced By: Forrest Dungan, PE Date 5/20/2019

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			Clearing and Grubbing	1.79	Acre	$ 40,000.00	$ 71,600.00
			Earthwork				
			Unclassified Excavation	10,900	CY	$ 16.50	$ 179,850.00
			Borrow Excavation	9,100	CY	$ 22.00	$ 200,200.00
			Drainage				
			3 Lane C&G	0.93	Miles	$ 750,000.00	$ 697,500.00
			2 Lane C&G	0.13	Miles	$ 750,000.00	$ 97,500.00
			Roundabout	0.06	Miles	$ 750,000.00	$ 45,000.00
			Fine Grading	18,100	SY	$ 3.00	$ 54,300.00
			New Pavement (Main Line)	6,600	SY	$ 85.00	$ 561,000.00
			Resurfacing	17,300	SY	$ 20.00	$ 346,000.00
			Subgrade Stabilization	9,100	SY	$ 12.00	$ 109,200.00
			1'-6" Curb and Gutter	325	LF	$ 25.00	$ 8,125.00
			2'-6" Curb and Gutter	11,275	LF	$ 25.00	$ 281,875.00
			4" Concrete Island Cover	1,790	SY	$ 55.00	$ 98,450.00
			Erosion Control	9	Acres	$ 37,500.00	$ 337,500.00
			Sidewalk	5,900	SY	$ 45.00	$ 265,500.00
			Traffic Control				
			3 Lane C&G	0.93	Miles	$ 150,000.00	$ 139,500.00
			2 Lane C&G	0.13	Miles	$ 150,000.00	$ 19,500.00
			Roundabout	1.00	LS	$ 25,000.00	$ 25,000.00
			Thermo and Markers				
			3 Lane C&G	0.93	Miles	$ 100,000.00	$ 93,000.00
			2 Lane C&G	0.13	Miles	$ 100,000.00	$ 13,000.00
			Roundabout	1.00	LS	$ 10,000.00	$ 10,000.00
			Signing	1.00	LS	$ 25,000.00	$ 25,000.00
			Construction Utilities				
			Lump Sum Estimate	1.00	LS		$ -
			Misc. & Mob (15% Strs&Util)	1	LS		$ -
			Misc. & Mob (45% Functional)	1	LS		$ 1,655,400.00

Lgth 0.93

Contract Cost ..... $ 5,334,000.00
E. & C. 15% ..... $ 866,000.00
Construction Cost ..... **$ 6,200,000.00**

TIP No. U-6202 | **Func** | County: **New Hanover**

Route SR 2048 (Gordon Rd)

From I-40 to Market St.

CONSTR. COST
$30,700,000

Alternative #2 (6-lane arterial typical)

Typical Section 6-Ln Divided, 30' Median, 5'-10' Sidewalk, Ditch

Prepared By: HNTB 4/4/19

Requested By: Jennifer Martin, PE 5/21/19

Priced By: Forrest Dungan, PE 5/22/19

Des	Sec No.	Description	Quantity	Unit	Price	Amount
		Clearing & Grubbing	13	ACR	$ 25,000.00	$ 325,000.00
		Unclassified Excavation	155,000	CY	$ 11.00	$ 1,705,000.00
		Borrow Excavation	51,000	CY	$ 16.00	$ 816,000.00
		Fine Grading	210,000	SY	$ 2.00	$ 420,000.00
		Drainage				
		-L- Length (6-Ln Divided)	2.75	Mi	$ 1,000,000.00	$ 2,750,000.00
		Paving				
		Resurfacing Existing Asphalt Pavement	56,500	SY	$ 17.00	$ 960,500.00
		Full-Depth Asphalt Pavement (widening)	83,100	SY	$ 65.00	$ 5,401,500.00
		Subgrade Stabilization	83,200	SY	$ 11.00	$ 915,200.00
		2' - 6" Curb & Gutter	29,100	FT	$ 25.00	$ 727,500.00
		1' - 6" Curb & Gutter	14,700	FT	$ 20.00	$ 294,000.00
		Traffic Control	2.75	Mi	$ 150,000.00	$ 412,500.00
		Sidewalk	23,200	SY	$ 42.00	$ 974,400.00
		Concrete Monolithic Island, Suface Mounted	4,350	SY	$ 70.00	$ 304,500.00
		Thermo & Markers				
		-L- Length (6-Ln Divided)	2.75	Mi	$ 110,000.00	$ 302,500.00
		Erosion Control	20	ACR	$ 60,000.00	$ 1,175,826.00
		Traffic Signals				
		Gordon Rd & East of I-40 (Ramp Ent & Exit) - Upgrade	1	EA	$ 150,000.00	$ 150,000.00
		Gordon Rd @ Blount Dr - New	1	EA	$ 150,000.00	$ 150,000.00
		Gordon Rd @ Harris Rd - Upgrade	1	EA	$ 150,000.00	$ 150,000.00
		Gordon Rd @ White Rd - Upgrade	1	EA	$ 150,000.00	$ 150,000.00
		Gordon Rd @ Netherlands Dr - Upgrade	1	EA	$ 150,000.00	$ 150,000.00
		Gordon Rd @ US 17 - Upgrade	1	EA	$ 150,000.00	$ 150,000.00
		Construction Utilities				
		Lump Sum Estimate	1	LS		$ -
		Misc & Mob 15% Strs,Walls, Util Construction	1	LS		$ -
		Misc & Mob 45% Roadway	1	LS		$ 8,273,574.00

Lgth 2.75

Contract Cost ..... $ 26,658,000.00

E. & C. 15% ..... $ 4,042,000.00

Construction Cost ..... **$ 30,700,000.00**

North Carolina Department of Transportation
Functional Estimate

TIP No. U-6202 | **Func** | County: **New Hanover**
Route SR 2048 (Gordon Rd)
From I-40 to Market St.

CONSTR. COST
$25,200,000

Alternative #1 (4-lane arterial typical)

Typical Section 4-Ln Divided, 30' Median, 5'-10' Sidewalk, Ditch
Prepared By: HNTB 4/4/19
Requested By: Jennifer Martin, PE 5/21/19
Priced By: Forrest Dungan, PE 5/22/19

Des	Sec No.	Description	Quantity	Unit	Price	Amount
		Clearing & Grubbing	9	ACR	$ 25,000.00	$ 236,710.00
		Unclassified Excavation	145,000	CY	$ 11.00	$ 1,595,000.00
		Borrow Excavation	39,000	CY	$ 17.00	$ 663,000.00
		Fine Grading	175,000	SY	$ 2.00	$ 350,000.00
		Drainage				
		-L- Length (4-Ln Divided)	2.75	Mi	$ 900,000.00	$ 2,475,000.00
		Paving				
		Resurfacing Existing Asphalt Pavement	56,000	SY	$ 17.00	$ 952,000.00
		Full-Depth Asphalt Pavement (widening)	50,600	SY	$ 65.00	$ 3,289,000.00
		Subgrade Stabilization	50,700	SY	$ 11.00	$ 557,700.00
		2' - 6" Curb & Gutter	29,900	FT	$ 25.00	$ 747,500.00
		1' - 6" Curb & Gutter	14,800	FT	$ 20.00	$ 296,000.00
		Traffic Control	2.75	Mi	$ 150,000.00	$ 412,500.00
		Sidewalk	23,100	SY	$ 42.00	$ 970,200.00
		Concrete Monolithic Island, Suface Mounted	4,350	SY	$ 70.00	$ 304,500.00
		Thermo & Markers				
		-L- Length (4-Ln Divided)	2.75	Mi	$ 100,000.00	$ 275,000.00
		Erosion Control	18	ACR	$ 60,000.00	$ 1,080,000.00
		Traffic Signals				
		Gordon Rd & East of I-40 (Ramp Ent & Exit) - Upgrade	1	EA	$ 150,000.00	$ 150,000.00
		Gordon Rd @ Blount Dr - New	1	EA	$ 150,000.00	$ 150,000.00
		Gordon Rd @ Harris Rd - Upgrade	1	EA	$ 150,000.00	$ 150,000.00
		Gordon Rd @ White Rd - Upgrade	1	EA	$ 150,000.00	$ 150,000.00
		Gordon Rd @ Netherlands Dr - Upgrade	1	EA	$ 150,000.00	$ 150,000.00
		Gordon Rd @ US 17 - Upgrade	1	EA	$ 150,000.00	$ 150,000.00
		Construction Utilities				
		Lump Sum Estimate	1	LS		$ -
		Misc & Mob 15% Strs,Walls, Util Construction	1	LS		$ -
		Misc & Mob 45% Roadway	1	LS		$ 6,796,890.00

Lgth 2.75

Contract Cost ..... $ 21,901,000.00
E. & C. 15% ..... $ 3,299,000.00
Construction Cost ..... **$ 25,200,000.00**

TIP No. **H184539** County: **HAYWOOD**
Route **US 276 / Chinquapin Road**
From
Typical Section **2 LANE RURAL**

CONSTR.COST
$1,850,000

Prepared By: HDR Engineering Jeff Dayton, PE / Phillip Hutcherson, PE 04/23/19
Requested By: Sonya Tankersley 05/02/19 Due 6/3/2019
Priced By: Forrest Dungan, PE 05/15/19

Line Item	Des	Sec No.	Description		Unit	Price	Amount
			Clearing and Grubbing	0.90	Acre	$ 50,000.00	$ 45,000.00
			Unclassified Excavation	750	CY	$ 30.00	$ 22,500.00
			Borrow Excavation	2,000	CY	$ 35.00	$ 70,000.00
			Removal of Existing Asphalt Pavement	845	SY	$ 15.00	$ 12,675.00
			Drainage				
			2-Ln	0.20	Miles	$ 400,000.00	$ 80,000.00
			Fine Grading	1,500	SY	$ 5.00	$ 7,500.00
			Pavement				
			New and Widening	1,230	SY	$ 90.00	$ 110,700.00
			Resurfacing	1,015	SY	$ 20.00	$ 20,300.00
			Signing				
			Two intersections	1	LS	$ 5,000.00	$ 5,000.00
			Guardrail				
			New Guardrail	240	LF	$ 25.00	$ 6,000.00
			Anchors	4	Each	$ 3,400.00	$ 13,600.00
			Erosion Control	1.35	Acre	$ 75,000.00	$ 101,250.00
			Traffic Control	1	LS	$ 125,000.00	$ 125,000.00
			Thermo and Markers				
			2-Ln	1.00	LS	$ 25,000.00	$ 25,000.00
			Structures				
			New Str - over River -32 x 75 (assume box beam)	2,400	SF	$ 200.00	$ 480,000.00
			Bridge Approach Slabs 2@ 32'x 25'	1,600	SF	$ 25.00	$ 40,000.00
			Structure Removal 1 @ 25' x 75'	1,875	SF	$ 30.00	$ 56,250.00
			Utility Construction				
			Per Utility Section	1	LS	$ -	$ -
			Misc. & Mob (15% Strs & Util)	1	LS	$ -	$ 86,000.00
			Misc. & Mob (45% Roadway)	1	LS	$ -	$ 291,225.00

Lgth **Miles**

Contract Cost		$ 1,598,000.00
E. & C. 15%		$ 252,000.00
Construction Cost		**$ 1,850,000.00**

Note: Right-of-Way and R/W Utilities are not included in cost shown above.

North Carolina Department of Transportation
Preliminary Estimate

TIP No. H184140 **FEAS** County: **RUTHERFORD**
Charlotte Rd/Main St
From S. Main St to Yarboro St
Typical Section 3 Lane, Median Divided

CONSTR. COST
$28,800,000

Prepared By: Atkins Date 5/6/2019
Requested By: NCDOT Date 5/15/2019
Priced By: Forrest Dungan, PE Date 5/15/2019

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			Clearing and Grubbing	7.0	Acre	$ 25,000.00	$ 175,000.00
			Supplemental Clearing and Grubbing	1.0	Acre	$ 5,000.00	$ 5,000.00
			Unclassified Excavation	98,000	CY	$ 11.00	$ 1,078,000.00
			Borrow	10,000	CY	$ 20.00	$ 200,000.00
			Pavement Removal	560	SY	$ 10.00	$ 5,600.00
			Drainage				
			3 Lane Curb and Gutter	4.82	Miles	$ 750,000.00	$ 3,615,000.00
			3 Lane Shoulder	0.28	Miles	$ 300,000.00	$ 84,000.00
			2 Lane Shoulder	1.43	Miles	$ 300,000.00	$ 429,000.00
			Fine Grading	11,100	SY	$ 3.00	$ 33,300.00
			Subgrade Stabilization	11,100	SY	$ 12.00	$ 133,200.00
			New Pavement	9,900	SY	$ 75.00	$ 742,500.00
			Resurfacing	145,800	SY	$ 25.00	$ 3,645,000.00
			2'-6" Concrete Curb and Gutter	58,400	LF	$ 22.00	$ 1,284,800.00
			1'-6" Concrete Curb and Gutter	19,300	LF	$ 20.00	$ 386,000.00
			4" Concrete Sidewalk	21,100	SY	$ 42.00	$ 886,200.00
			Asphalt Multi-Use Path	9,000	SY	$ 50.00	$ 450,000.00
			Monolithic Islands	465	SY	$ 85.00	$ 39,525.00
			New Traffic Signals	1	Each	$ 150,000.00	$ 150,000.00
			Upgrade Existing Traffic Signals	10	Each	$ 100,000.00	$ 1,000,000.00
			Traffic Control				
			3 Lane Curb and Gutter	4.82	Miles	$ 150,000.00	$ 723,000.00
			3 Lane Shoulder	0.28	Miles	$ 150,000.00	$ 42,000.00
			2 Lane Shoulder	1.43	Miles	$ 150,000.00	$ 214,500.00
			Thermo and Markers				
			3 Lane Curb and Gutter	4.82	Miles	$ 75,000.00	$ 361,500.00
			3 Lane Shoulder	0.28	Miles	$ 75,000.00	$ 21,000.00
			2 Lane Shoulder	1.43	Miles	$ 75,000.00	$ 107,250.00
			Erosion Control	50	Acres	$ 20,000.00	$ 1,000,000.00
			Rail Crossing Rubber Track Surface	100.00	LF	$ 2,000.00	$ 200,000.00
			Signals	1.00	LS	$ 250,000.00	$ 250,000.00
			Utililites				
			To Be Added	1	LS		$ -
			Misc & Mob Structures 15%	1	LS		$ -
			Misc & Mob Roadway 45%	1	LS		$ 7,767,625.00
				Contract Cost ……..	……..	……..	$ 25,029,000.00
				E. & C. 15% ……..	……..	……..	$ 3,771,000.00
				Construction Cost ……..	……..	……..	**$ 28,800,000.00**

ROW Costs Not Included

North Carolina Department of Transportation
Preliminary Estimate

TIP No. **H183915 - Alternate 1 - Part B** **Feas.** County: **Orange**
Route: Realign & Widen Buckhorn Road (SR 1114)
From: W. Ten Road (1146) to US 70
Typical Section: 4 Lane Divided C&G w/ 23' Raised Median

CONSTR. COST
$26,400,000

Prepared By: Michael Baker Engineering, Inc. Date: 4/17/2019
Priced By: Forrest Dungan, PE Date 5/15/2019

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			Clearing and Grubbing	15.20	Acre	$ 25,000.00	$ 380,000.00
			Supp. Clearing and Grubbing	2.00	Acre	$ 5,000.00	$ 10,000.00
			Reinforced Bridge Approach Fill	1	LS	$ 100,000.00	$ 100,000.00
			Unclassified Excavation	66,100	CY	$ 13.00	$ 859,300.00
			Borrow Excavation	202,300	CY	$ 10.00	$ 2,023,000.00
			Drainage Existing Location	0.60	Miles	$ 300,000.00	$ 180,000.00
			Drainage Existing Location (Ramp)	1.20	Miles	$ 100,000.00	$ 120,000.00
			Drainage New Location (4-lane divided C&G)	0.70	Miles	$ 1,000,000.00	$ 700,000.00
			Drainage New Location (shoulder section)	0.20	Miles	$ 100,000.00	$ 20,000.00
			Drainage New Location (Loop)	0.20	Miles	$ 100,000.00	$ 20,000.00
			Paving Items				
			Full-Width Asphalt Pavement	13,700	SY	$ 65.00	$ 890,500.00
			Pavement Widening	5,500	SY	$ 75.00	$ 412,500.00
			Pavement Resurfacing	17,900	SY	$ 25.00	$ 447,500.00
			Fine Grading	103,300	SY	$ 2.00	$ 206,600.00
			Asphalt Pavement Removal	19,640	SY	$ 7.00	$ 137,480.00
			1'-6" Concrete Curb and Gutter	6,280	LF	$ 20.00	$ 125,600.00
			2'-6" Concrete Curb and Gutter	9,570	LF	$ 25.00	$ 239,250.00
			5" Monolithic Islands (Surface Mounted)	550	SY	$ 75.00	$ 41,250.00
			5" Monolithic Islands (Keyed-In)	2,250	SY	$ 75.00	$ 168,750.00
			Concrete Single Face Barrier	300	LF	$ 125.00	$ 37,500.00
			Guardrail				
			Steel Beam Guardrail	3,800	LF	$ 20.00	$ 76,000.00
			Guardrail Anchor Units, GREU TL-2	2	Each	$ 3,400.00	$ 6,800.00
			Guardrail Anchor Units, GREU TL-3	12	Each	$ 3,400.00	$ 40,800.00
			Guardrail Anchor Units, CAT-1	5	Each	$ 750.00	$ 3,750.00
			Guardrail Structure Anchor Unit B-77	14	Each	$ 2,000.00	$ 28,000.00
			Traffic Control - Widen on New Location	1.00	Miles	$ 300,000.00	$ 300,000.00
			Traffic Control - Realign Ramps	0.90	Miles	$ 300,000.00	$ 270,000.00
			Thermo and Markers (4 lane divided)	0.80	Miles	$ 100,000.00	$ 80,000.00
			Thermo and Markers (2 lane)	0.75	Miles	$ 75,000.00	$ 56,250.00
			Thermo and Markers (Ramps)	0.90	Miles	$ 50,000.00	$ 45,000.00
			Thermo and Markers (Loop)	0.20	Miles	$ 50,000.00	$ 10,000.00
			Erosion Control	25	Acres	$ 50,000.00	$ 1,250,000.00
			Signing Interchanges				
			Diamond w/ Loop	1.00	Each	$ 250,000.00	$ 250,000.00
			Relocate CMS	1.00	Each	$ 250,000.00	$ 250,000.00
			Additional Signing	1.00	LS	$ 125,000.00	$ 125,000.00
			Traffic Signal (New)				
			SR 1114/US 70 Intersection	1.00	Each	$ 150,000.00	$ 150,000.00
			Structures				
			L over I-40/I-85 (237' 8" L x 88' 10" W)	21,046	SF	$ 150.00	$ 3,156,900.00
			L Over NCRR (2 @ 36'W x 150' L)	10,800	SF	$ 175.00	$ 1,890,000.00
			Approach Slabs	1	LS	$ 200,000.00	$ 200,000.00
			Remove Existing Bridge (54' x 207')	11,200	SF	$ 25.00	$ 280,000.00
			Retaining Walls (500' L x 23' avg H)	11,500	SF	$ 150.00	$ 1,725,000.00
			Utility Construction				
			Relocate Existing Water Line		LF		$ -
			Relocate Existing Sewer Line		LF		$ -
			Misc. & Mob (15% Strs&Util)	1	LS		$ 1,088,000.00
			Misc. & Mob (45% Functional)	1	LS		$ 4,527,270.00

Lgth ___ Miles

Contract Cost …… …… $ 22,928,000.00
E. & C. 15% …… …… $ 3,472,000.00

North Carolina Department of Transportation
Preliminary Estimate

TIP No. **H183915 - Alternate 1 - Part A** **Feas.** County: **Orange**
Route: Realign & Widen Buckhorn Road (SR 1114)
From: W. Ten Road (1146) to US 70
Typical Section: 4 Lane Divided C&G w/ 23' Raised Median

CONSTR. COST
$10,200,000

Prepared By: Michael Baker Engineering, Inc. Date: 4/17/2019
Priced By: Forrest Dungan, PE Date 5/15/2019

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			Clearing and Grubbing	7.9	Acre	$ 25,000.00	$ 197,500.00
			Supp. Clearing and Grubbing	1	Acre	$ 5,000.00	$ 5,000.00
			Unclassified Excavation	9,600	CY	$ 13.00	$ 124,800.00
			Borrow Excavation	3,800	CY	$ 10.00	$ 38,000.00
			Drainage Existing Location	0.40	Miles	$ 1,000,000.00	$ 400,000.00
			Drainage New Location (4 Lane Divided)	0.40	Miles	$ 300,000.00	$ 120,000.00
			Paving Items				
			Full-Width Asphalt Pavement	56,000	SY	$ 65.00	$ 3,640,000.00
			Pavement Widening	5,300	SY	$ 75.00	$ 397,500.00
			Pavement Resurfacing	11,500	SY	$ 25.00	$ 287,500.00
			Fine Grading	37,900	SY	$ 2.00	$ 75,800.00
			Asphalt Pavement Removal	630	SY	$ 7.00	$ 4,410.00
			1'-6" Concrete Curb and Gutter	3,620	LF	$ 20.00	$ 72,400.00
			2'-6" Concrete Curb and Gutter	4,440	LF	$ 25.00	$ 111,000.00
			5" Monolithic Islands (Keyed-In)	300	SY	$ 75.00	$ 22,500.00
			Traffic Control - Widen on Existing	0.80	Miles	$ 300,000.00	$ 240,000.00
			Thermo and Markers (4 lane divided)	0.40	Miles	$ 75,000.00	$ 30,000.00
			Thermo and Markers (shoulder section)	0.40	Miles	$ 100,000.00	$ 40,000.00
			Erosion Control	5.5	Acres	$ 50,000.00	$ 275,000.00
			Misc. & Mob (15% Strs&Util)	1	LS		$ -
			Misc. & Mob (45% Functional)	1	LS		$ 2,737,590.00

Lgth ___ Miles

Contract Cost …….. …….. $ 8,819,000.00
E. & C. 15% …….. …….. $ 1,381,000.00

TIP No. **H171680** County: **CRAVEN**
Route
From
Typical Section **Intersection Improvements**

CONSTR.COST
$7,500,000

Prepared By: HDR Engineering Jeff Dayton, PE / Phillip Hutcherson 02/04/19
Requested By: Sonya Tankersley 02/28/19 Due Date 3/28/2019
Priced By: Forrest Dungan, PE 03/07/19

Line Item	Des	Sec No.	Description		Unit	Price	Amount
			Surveying	1	LS	$ 10,000.00	$ 10,000.00
			Clearing and Grubbing	8.40	Acre	$ 30,000.00	$ 252,000.00
			Supp. Clearing and Grubbing	2	Acre	$ 5,000.00	$ 10,000.00
			Unclassified Excavation	78	CY	$ 50.00	$ 3,893.81
			Borrow Excavation	19,469	CY	$ 25.00	$ 486,725.66
			Removal of Existing Asphalt Pavement	9,208	SY	$ 11.00	$ 101,288.00
			Drainage				
			8-Ln	-	Miles	$ -	$ -
			6-Ln	-	Miles	$ -	$ -
			4-Ln	-	Miles	$ -	$ -
			3-Ln	-	Miles	$ -	$ -
			2-Ln	0.88	Miles	$ 500,000.00	$ 440,000.00
			2-Ln Ramps	-	Miles	$ -	$ -
			1-Ln Ramps	-	Miles	$ -	$ -
			1-Ln Loops	-	Miles	$ -	$ -
			Fine Grading	15,000	SY	$ 3.00	$ 45,000.00
			Pavement				
			New and Widening	13,612	SY	$ 80.00	$ 1,088,960.00
			Resurfacing	6,372	SY	$ 20.00	$ 127,440.00
			Concrete Curb and Gutter 2-6	11,472	LF	$ 25.00	$ 286,800.00
			Concrete Curb and Gutter 1-6	6,112	LF	$ 20.00	$ 122,240.00
			Sidewalk	4,245	SY	$ 45.00	$ 191,025.00
			Islands	500	SY	$ 75.00	$ 37,500.00
			Signing for Interchanges				
			Roundabout	2	Each	$ 15,000.00	$ 30,000.00
			Other Signing	1	LS	$ 5,000.00	$ 5,000.00
			Erosion Control	10	Acre	$ 35,000.00	$ 339,500.00
			Traffic Control	1	Mile	$ 150,000.00	$ 150,000.00
			Traffic Signals	1	Each	$ 150,000.00	$ 150,000.00
			Thermo and Markers				
			8-Ln	-	Miles	$ -	$ -
			6-Ln	-	Miles	$ -	$ -
			4-Ln	-	Miles	$ -	$ -
			3-Ln	-	Miles	$ -	$ -
			2-Ln	0.88	Miles	$ 40,000.00	$ 35,200.00
			2-Ln Ramps	-	Miles	$ -	$ -
			1-Ln Ramps	-	Miles	$ -	$ -
			1-Ln Loops	-	Miles	$ -	$ -
			Utility Construction				
			Per Utility Section	1	LS	$ 699,811.00	$ 699,811.00
			Misc. & Mob (15% Strs & Util)	1	LS	$ -	$ 105,000.00
			Misc. & Mob (45% Roadway)	1	LS	$ -	$ 1,761,616.53

Lgth **Miles**

Contract Cost		$ 6,479,000.00
E. & C. 15%		$ 1,021,000.00
Construction Cost		**$ 7,500,000.00**

Note: Right-of-Way and R/W Utilities are not included in cost shown above.

North Carolina Department of Transportation
Preliminary Estimate

TIP No. **H170784/R-5881 ALT 3** **FEASIBILITY** County: **JACKSON**
Route **US-64**

From **NC-107 to Pebble Creek Rd**
Typical Section WIDEN FROM 2 TO 3 LANES, ADD ROUNDABOUT

CONSTR. COST
$6,200,000

Prepared By: Atkins Date 3/1/2019
Requested By: NCDOT Date 5/16/2019
Priced By: Forrest Dungan, PE Date 5/20/2019

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			Clearing and Grubbing	1.79	Acre	$ 40,000.00	$ 71,600.00
			Earthwork				
			Unclassified Excavation	10,900	CY	$ 16.50	$ 179,850.00
			Borrow Excavation	9,100	CY	$ 22.00	$ 200,200.00
			Drainage				
			3 Lane C&G	0.93	Miles	$ 750,000.00	$ 697,500.00
			2 Lane C&G	0.13	Miles	$ 750,000.00	$ 97,500.00
			Roundabout	0.06	Miles	$ 750,000.00	$ 45,000.00
			Fine Grading	18,100	SY	$ 3.00	$ 54,300.00
			New Pavement (Main Line)	6,600	SY	$ 85.00	$ 561,000.00
			Resurfacing	17,300	SY	$ 20.00	$ 346,000.00
			Subgrade Stabilization	9,100	SY	$ 12.00	$ 109,200.00
			1'-6" Curb and Gutter	325	LF	$ 25.00	$ 8,125.00
			2'-6" Curb and Gutter	11,275	LF	$ 25.00	$ 281,875.00
			4" Concrete Island Cover	1,790	SY	$ 55.00	$ 98,450.00
			Erosion Control	9	Acres	$ 37,500.00	$ 337,500.00
			Sidewalk	5,900	SY	$ 45.00	$ 265,500.00
			Traffic Control				
			3 Lane C&G	0.93	Miles	$ 150,000.00	$ 139,500.00
			2 Lane C&G	0.13	Miles	$ 150,000.00	$ 19,500.00
			Roundabout	1.00	LS	$ 25,000.00	$ 25,000.00
			Thermo and Markers				
			3 Lane C&G	0.93	Miles	$ 100,000.00	$ 93,000.00
			2 Lane C&G	0.13	Miles	$ 100,000.00	$ 13,000.00
			Roundabout	1.00	LS	$ 10,000.00	$ 10,000.00
			Signing	1.00	LS	$ 25,000.00	$ 25,000.00
			Construction Utilities				
			Lump Sum Estimate	1.00	LS		$ -
			Misc. & Mob (15% Strs&Util)	1	LS		$ -
			Misc. & Mob (45% Functional)	1	LS		$ 1,655,400.00

Lgth 0.93

Contract Cost ..... $ 5,334,000.00
E. & C. 15% ..... $ 866,000.00
Construction Cost ..... **$ 6,200,000.00**

TIP No. **H171680** County: **CRAVEN**
Route
From
Typical Section **Intersection Improvements**

CONSTR.COST
$7,500,000

Prepared By: HDR Engineering Jeff Dayton, PE / Phillip Hutcherson 02/04/19
Requested By: Sonya Tankersley 02/28/19 Due Date 3/28/2019
Priced By: Forrest Dungan, PE 03/07/19

Line Item	Des	Sec No.	Description		Unit	Price	Amount
			Surveying	1	LS	$ 10,000.00	$ 10,000.00
			Clearing and Grubbing	8.40	Acre	$ 30,000.00	$ 252,000.00
			Supp. Clearing and Grubbing	2	Acre	$ 5,000.00	$ 10,000.00
			Unclassified Excavation	78	CY	$ 50.00	$ 3,893.81
			Borrow Excavation	19,469	CY	$ 25.00	$ 486,725.66
			Removal of Existing Asphalt Pavement	9,208	SY	$ 11.00	$ 101,288.00
			Drainage				
			8-Ln	-	Miles	$ -	$ -
			6-Ln	-	Miles	$ -	$ -
			4-Ln	-	Miles	$ -	$ -
			3-Ln	-	Miles	$ -	$ -
			2-Ln	0.88	Miles	$ 500,000.00	$ 440,000.00
			2-Ln Ramps	-	Miles	$ -	$ -
			1-Ln Ramps	-	Miles	$ -	$ -
			1-Ln Loops	-	Miles	$ -	$ -
			Fine Grading	15,000	SY	$ 3.00	$ 45,000.00
			Pavement				
			New and Widening	13,612	SY	$ 80.00	$ 1,088,960.00
			Resurfacing	6,372	SY	$ 20.00	$ 127,440.00
			Concrete Curb and Gutter 2-6	11,472	LF	$ 25.00	$ 286,800.00
			Concrete Curb and Gutter 1-6	6,112	LF	$ 20.00	$ 122,240.00
			Sidewalk	4,245	SY	$ 45.00	$ 191,025.00
			Islands	500	SY	$ 75.00	$ 37,500.00
			Signing for Interchanges				
			Roundabout	2	Each	$ 15,000.00	$ 30,000.00
			Other Signing	1	LS	$ 5,000.00	$ 5,000.00
			Erosion Control	10	Acre	$ 35,000.00	$ 339,500.00
			Traffic Control	1	Mile	$ 150,000.00	$ 150,000.00
			Traffic Signals	1	Each	$ 150,000.00	$ 150,000.00
			Thermo and Markers				
			8-Ln	-	Miles	$ -	$ -
			6-Ln	-	Miles	$ -	$ -
			4-Ln	-	Miles	$ -	$ -
			3-Ln	-	Miles	$ -	$ -
			2-Ln	0.88	Miles	$ 40,000.00	$ 35,200.00
			2-Ln Ramps	-	Miles	$ -	$ -
			1-Ln Ramps	-	Miles	$ -	$ -
			1-Ln Loops	-	Miles	$ -	$ -
			Utility Construction				
			Per Utility Section	1	LS	$ 699,811.00	$ 699,811.00
			Misc. & Mob (15% Strs & Util)	1	LS	$ -	$ 105,000.00
			Misc. & Mob (45% Roadway)	1	LS	$ -	$ 1,761,616.53

Lgth **Miles**

Contract Cost		$ 6,479,000.00
E. & C. 15%		$ 1,021,000.00
Construction Cost		**$ 7,500,000.00**

Note: Right-of-Way and R/W Utilities are not included in cost shown above.

North Carolina Department of Transportation
Preliminary Estimate

TIP No. **H183915 - Alternate 1 - Part A** **Feas.** County: **Orange**
Route: Realign & Widen Buckhorn Road (SR 1114)
From: W. Ten Road (1146) to US 70
Typical Section: 4 Lane Divided C&G w/ 23' Raised Median

CONSTR. COST
$10,200,000

Prepared By: Michael Baker Engineering, Inc. Date: 4/17/2019
Priced By: Forrest Dungan, PE Date 5/15/2019

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			Clearing and Grubbing	7.9	Acre	$ 25,000.00	$ 197,500.00
			Supp. Clearing and Grubbing	1	Acre	$ 5,000.00	$ 5,000.00
			Unclassified Excavation	9,600	CY	$ 13.00	$ 124,800.00
			Borrow Excavation	3,800	CY	$ 10.00	$ 38,000.00
			Drainage Existing Location	0.40	Miles	$ 1,000,000.00	$ 400,000.00
			Drainage New Location (4 Lane Divided)	0.40	Miles	$ 300,000.00	$ 120,000.00
			Paving Items				
			Full-Width Asphalt Pavement	56,000	SY	$ 65.00	$ 3,640,000.00
			Pavement Widening	5,300	SY	$ 75.00	$ 397,500.00
			Pavement Resurfacing	11,500	SY	$ 25.00	$ 287,500.00
			Fine Grading	37,900	SY	$ 2.00	$ 75,800.00
			Asphalt Pavement Removal	630	SY	$ 7.00	$ 4,410.00
			1'-6" Concrete Curb and Gutter	3,620	LF	$ 20.00	$ 72,400.00
			2'-6" Concrete Curb and Gutter	4,440	LF	$ 25.00	$ 111,000.00
			5" Monolithic Islands (Keyed-In)	300	SY	$ 75.00	$ 22,500.00
			Traffic Control - Widen on Existing	0.80	Miles	$ 300,000.00	$ 240,000.00
			Thermo and Markers (4 lane divided)	0.40	Miles	$ 75,000.00	$ 30,000.00
			Thermo and Markers (shoulder section)	0.40	Miles	$ 100,000.00	$ 40,000.00
			Erosion Control	5.5	Acres	$ 50,000.00	$ 275,000.00
			Misc. & Mob (15% Strs&Util)	1	LS		$ -
			Misc. & Mob (45% Functional)	1	LS		$ 2,737,590.00

Lgth ___ Miles

Contract Cost …….. …….. $ 8,819,000.00
E. & C. 15% …….. …….. $ 1,381,000.00

North Carolina Department of Transportation
Preliminary Estimate

TIP No. **H183915 - Alternate 1 - Part B** **Feas.** County: **Orange**
Route: Realign & Widen Buckhorn Road (SR 1114)
From: W. Ten Road (1146) to US 70
Typical Section: 4 Lane Divided C&G w/ 23' Raised Median

CONSTR. COST
$26,400,000

Prepared By: Michael Baker Engineering, Inc. Date: 4/17/2019
Priced By: Forrest Dungan, PE Date 5/15/2019

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			Clearing and Grubbing	15.20	Acre	$ 25,000.00	$ 380,000.00
			Supp. Clearing and Grubbing	2.00	Acre	$ 5,000.00	$ 10,000.00
			Reinforced Bridge Approach Fill	1	LS	$ 100,000.00	$ 100,000.00
			Unclassified Excavation	66,100	CY	$ 13.00	$ 859,300.00
			Borrow Excavation	202,300	CY	$ 10.00	$ 2,023,000.00
			Drainage Existing Location	0.60	Miles	$ 300,000.00	$ 180,000.00
			Drainage Existing Location (Ramp)	1.20	Miles	$ 100,000.00	$ 120,000.00
			Drainage New Location (4-lane divided C&G)	0.70	Miles	$ 1,000,000.00	$ 700,000.00
			Drainage New Location (shoulder section)	0.20	Miles	$ 100,000.00	$ 20,000.00
			Drainage New Location (Loop)	0.20	Miles	$ 100,000.00	$ 20,000.00
			Paving Items				
			Full-Width Asphalt Pavement	13,700	SY	$ 65.00	$ 890,500.00
			Pavement Widening	5,500	SY	$ 75.00	$ 412,500.00
			Pavement Resurfacing	17,900	SY	$ 25.00	$ 447,500.00
			Fine Grading	103,300	SY	$ 2.00	$ 206,600.00
			Asphalt Pavement Removal	19,640	SY	$ 7.00	$ 137,480.00
			1'-6" Concrete Curb and Gutter	6,280	LF	$ 20.00	$ 125,600.00
			2'-6" Concrete Curb and Gutter	9,570	LF	$ 25.00	$ 239,250.00
			5" Monolithic Islands (Surface Mounted)	550	SY	$ 75.00	$ 41,250.00
			5" Monolithic Islands (Keyed-In)	2,250	SY	$ 75.00	$ 168,750.00
			Concrete Single Face Barrier	300	LF	$ 125.00	$ 37,500.00
			Guardrail				
			Steel Beam Guardrail	3,800	LF	$ 20.00	$ 76,000.00
			Guardrail Anchor Units, GREU TL-2	2	Each	$ 3,400.00	$ 6,800.00
			Guardrail Anchor Units, GREU TL-3	12	Each	$ 3,400.00	$ 40,800.00
			Guardrail Anchor Units, CAT-1	5	Each	$ 750.00	$ 3,750.00
			Guardrail Structure Anchor Unit B-77	14	Each	$ 2,000.00	$ 28,000.00
			Traffic Control - Widen on New Location	1.00	Miles	$ 300,000.00	$ 300,000.00
			Traffic Control - Realign Ramps	0.90	Miles	$ 300,000.00	$ 270,000.00
			Thermo and Markers (4 lane divided)	0.80	Miles	$ 100,000.00	$ 80,000.00
			Thermo and Markers (2 lane)	0.75	Miles	$ 75,000.00	$ 56,250.00
			Thermo and Markers (Ramps)	0.90	Miles	$ 50,000.00	$ 45,000.00
			Thermo and Markers (Loop)	0.20	Miles	$ 50,000.00	$ 10,000.00
			Erosion Control	25	Acres	$ 50,000.00	$ 1,250,000.00
			Signing Interchanges				
			Diamond w/ Loop	1.00	Each	$ 250,000.00	$ 250,000.00
			Relocate CMS	1.00	Each	$ 250,000.00	$ 250,000.00
			Additional Signing	1.00	LS	$ 125,000.00	$ 125,000.00
			Traffic Signal (New)				
			SR 1114/US 70 Intersection	1.00	Each	$ 150,000.00	$ 150,000.00
			Structures				
			L over I-40/I-85 (237' 8" L x 88' 10" W)	21,046	SF	$ 150.00	$ 3,156,900.00
			L Over NCRR (2 @ 36'W x 150' L)	10,800	SF	$ 175.00	$ 1,890,000.00
			Approach Slabs	1	LS	$ 200,000.00	$ 200,000.00
			Remove Existing Bridge (54' x 207')	11,200	SF	$ 25.00	$ 280,000.00
			Retaining Walls (500' L x 23' avg H)	11,500	SF	$ 150.00	$ 1,725,000.00
			Utility Construction				
			Relocate Existing Water Line		LF		$ -
			Relocate Existing Sewer Line		LF		$ -
			Misc. & Mob (15% Strs&Util)	1	LS		$ 1,088,000.00
			Misc. & Mob (45% Functional)	1	LS		$ 4,527,270.00

Lgth ___ Miles

Contract Cost …… …… $ 22,928,000.00
E. & C. 15% …… …… $ 3,472,000.00

North Carolina Department of Transportation
Preliminary Estimate

TIP No. H184140 **FEAS** County: **RUTHERFORD**
Charlotte Rd/Main St
From S. Main St to Yarboro St
Typical Section 3 Lane, Median Divided

CONSTR. COST
$28,800,000

Prepared By: Atkins Date 5/6/2019
Requested By: NCDOT Date 5/15/2019
Priced By: Forrest Dungan, PE Date 5/15/2019

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			Clearing and Grubbing	7.0	Acre	$ 25,000.00	$ 175,000.00
			Supplemental Clearing and Grubbing	1.0	Acre	$ 5,000.00	$ 5,000.00
			Unclassified Excavation	98,000	CY	$ 11.00	$ 1,078,000.00
			Borrow	10,000	CY	$ 20.00	$ 200,000.00
			Pavement Removal	560	SY	$ 10.00	$ 5,600.00
			Drainage				
			3 Lane Curb and Gutter	4.82	Miles	$ 750,000.00	$ 3,615,000.00
			3 Lane Shoulder	0.28	Miles	$ 300,000.00	$ 84,000.00
			2 Lane Shoulder	1.43	Miles	$ 300,000.00	$ 429,000.00
			Fine Grading	11,100	SY	$ 3.00	$ 33,300.00
			Subgrade Stabilization	11,100	SY	$ 12.00	$ 133,200.00
			New Pavement	9,900	SY	$ 75.00	$ 742,500.00
			Resurfacing	145,800	SY	$ 25.00	$ 3,645,000.00
			2'-6" Concrete Curb and Gutter	58,400	LF	$ 22.00	$ 1,284,800.00
			1'-6" Concrete Curb and Gutter	19,300	LF	$ 20.00	$ 386,000.00
			4" Concrete Sidewalk	21,100	SY	$ 42.00	$ 886,200.00
			Asphalt Multi-Use Path	9,000	SY	$ 50.00	$ 450,000.00
			Monolithic Islands	465	SY	$ 85.00	$ 39,525.00
			New Traffic Signals	1	Each	$ 150,000.00	$ 150,000.00
			Upgrade Existing Traffic Signals	10	Each	$ 100,000.00	$ 1,000,000.00
			Traffic Control				
			3 Lane Curb and Gutter	4.82	Miles	$ 150,000.00	$ 723,000.00
			3 Lane Shoulder	0.28	Miles	$ 150,000.00	$ 42,000.00
			2 Lane Shoulder	1.43	Miles	$ 150,000.00	$ 214,500.00
			Thermo and Markers				
			3 Lane Curb and Gutter	4.82	Miles	$ 75,000.00	$ 361,500.00
			3 Lane Shoulder	0.28	Miles	$ 75,000.00	$ 21,000.00
			2 Lane Shoulder	1.43	Miles	$ 75,000.00	$ 107,250.00
			Erosion Control	50	Acres	$ 20,000.00	$ 1,000,000.00
			Rail Crossing Rubber Track Surface	100.00	LF	$ 2,000.00	$ 200,000.00
			Signals	1.00	LS	$ 250,000.00	$ 250,000.00
			Utililites				
			To Be Added	1	LS		$ -
			Misc & Mob Structures 15%	1	LS		$ -
			Misc & Mob Roadway 45%	1	LS		$ 7,767,625.00
				Contract Cost ……..	……..	……..	$ 25,029,000.00
				E. & C. 15% ……..	……..	……..	$ 3,771,000.00
				Construction Cost ……..	……..	……..	**$ 28,800,000.00**

ROW Costs Not Included

TIP No. **H184539** County: **HAYWOOD**
Route **US 276 / Chinquapin Road**
From
Typical Section **2 LANE RURAL**

CONSTR.COST
$1,850,000

Prepared By: HDR Engineering Jeff Dayton, PE / Phillip Hutcherson, PE 04/23/19
Requested By: Sonya Tankersley 05/02/19 Due 6/3/2019
Priced By: Forrest Dungan, PE 05/15/19

Line Item	Des	Sec No.	Description		Unit	Price	Amount
			Clearing and Grubbing	0.90	Acre	$ 50,000.00	$ 45,000.00
			Unclassified Excavation	750	CY	$ 30.00	$ 22,500.00
			Borrow Excavation	2,000	CY	$ 35.00	$ 70,000.00
			Removal of Existing Asphalt Pavement	845	SY	$ 15.00	$ 12,675.00
			Drainage				
			2-Ln	0.20	Miles	$ 400,000.00	$ 80,000.00
			Fine Grading	1,500	SY	$ 5.00	$ 7,500.00
			Pavement				
			New and Widening	1,230	SY	$ 90.00	$ 110,700.00
			Resurfacing	1,015	SY	$ 20.00	$ 20,300.00
			Signing				
			Two intersections	1	LS	$ 5,000.00	$ 5,000.00
			Guardrail				
			New Guardrail	240	LF	$ 25.00	$ 6,000.00
			Anchors	4	Each	$ 3,400.00	$ 13,600.00
			Erosion Control	1.35	Acre	$ 75,000.00	$ 101,250.00
			Traffic Control	1	LS	$ 125,000.00	$ 125,000.00
			Thermo and Markers				
			2-Ln	1.00	LS	$ 25,000.00	$ 25,000.00
			Structures				
			New Str - over River -32 x 75 (assume box beam)	2,400	SF	$ 200.00	$ 480,000.00
			Bridge Approach Slabs 2@ 32'x 25'	1,600	SF	$ 25.00	$ 40,000.00
			Structure Removal 1 @ 25' x 75'	1,875	SF	$ 30.00	$ 56,250.00
			Utility Construction				
			Per Utility Section	1	LS	$ -	$ -
			Misc. & Mob (15% Strs & Util)	1	LS	$ -	$ 86,000.00
			Misc. & Mob (45% Roadway)	1	LS	$ -	$ 291,225.00

Lgth **Miles**

Contract Cost		$ 1,598,000.00
E. & C. 15%		$ 252,000.00
Construction Cost		**$ 1,850,000.00**

Note: Right-of-Way and R/W Utilities are not included in cost shown above.

North Carolina Department of Transportation
Functional Estimate

TIP No. U-6202 | **Func** | County: **New Hanover**
Route SR 2048 (Gordon Rd)
From I-40 to Market St.

CONSTR. COST
$25,200,000

Alternative #1 (4-lane arterial typical)

Typical Section 4-Ln Divided, 30' Median, 5'-10' Sidewalk, Ditch
Prepared By: HNTB 4/4/19
Requested By: Jennifer Martin, PE 5/21/19
Priced By: Forrest Dungan, PE 5/22/19

Des	Sec No.	Description	Quantity	Unit	Price	Amount
		Clearing & Grubbing	9	ACR	$ 25,000.00	$ 236,710.00
		Unclassified Excavation	145,000	CY	$ 11.00	$ 1,595,000.00
		Borrow Excavation	39,000	CY	$ 17.00	$ 663,000.00
		Fine Grading	175,000	SY	$ 2.00	$ 350,000.00
		Drainage				
		-L- Length (4-Ln Divided)	2.75	Mi	$ 900,000.00	$ 2,475,000.00
		Paving				
		Resurfacing Existing Asphalt Pavement	56,000	SY	$ 17.00	$ 952,000.00
		Full-Depth Asphalt Pavement (widening)	50,600	SY	$ 65.00	$ 3,289,000.00
		Subgrade Stabilization	50,700	SY	$ 11.00	$ 557,700.00
		2' - 6" Curb & Gutter	29,900	FT	$ 25.00	$ 747,500.00
		1' - 6" Curb & Gutter	14,800	FT	$ 20.00	$ 296,000.00
		Traffic Control	2.75	Mi	$ 150,000.00	$ 412,500.00
		Sidewalk	23,100	SY	$ 42.00	$ 970,200.00
		Concrete Monolithic Island, Suface Mounted	4,350	SY	$ 70.00	$ 304,500.00
		Thermo & Markers				
		-L- Length (4-Ln Divided)	2.75	Mi	$ 100,000.00	$ 275,000.00
		Erosion Control	18	ACR	$ 60,000.00	$ 1,080,000.00
		Traffic Signals				
		Gordon Rd & East of I-40 (Ramp Ent & Exit) - Upgrade	1	EA	$ 150,000.00	$ 150,000.00
		Gordon Rd @ Blount Dr - New	1	EA	$ 150,000.00	$ 150,000.00
		Gordon Rd @ Harris Rd - Upgrade	1	EA	$ 150,000.00	$ 150,000.00
		Gordon Rd @ White Rd - Upgrade	1	EA	$ 150,000.00	$ 150,000.00
		Gordon Rd @ Netherlands Dr - Upgrade	1	EA	$ 150,000.00	$ 150,000.00
		Gordon Rd @ US 17 - Upgrade	1	EA	$ 150,000.00	$ 150,000.00
		Construction Utilities				
		Lump Sum Estimate	1	LS		$ -
		Misc & Mob 15% Strs,Walls, Util Construction	1	LS		$ -
		Misc & Mob 45% Roadway	1	LS		$ 6,796,890.00

Lgth 2.75

Contract Cost ..... $ 21,901,000.00
E. & C. 15% ..... $ 3,299,000.00
Construction Cost ..... **$ 25,200,000.00**

TIP No. U-6202 | **Func** | County: **New Hanover**

Route SR 2048 (Gordon Rd)

From I-40 to Market St.

CONSTR. COST
$30,700,000

Alternative #2 (6-lane arterial typical)

Typical Section 6-Ln Divided, 30' Median, 5'-10' Sidewalk, Ditch

Prepared By: HNTB 4/4/19

Requested By: Jennifer Martin, PE 5/21/19

Priced By: Forrest Dungan, PE 5/22/19

Des	Sec No.	Description	Quantity	Unit	Price	Amount
		Clearing & Grubbing	13	ACR	$ 25,000.00	$ 325,000.00
		Unclassified Excavation	155,000	CY	$ 11.00	$ 1,705,000.00
		Borrow Excavation	51,000	CY	$ 16.00	$ 816,000.00
		Fine Grading	210,000	SY	$ 2.00	$ 420,000.00
		Drainage				
		-L- Length (6-Ln Divided)	2.75	Mi	$ 1,000,000.00	$ 2,750,000.00
		Paving				
		Resurfacing Existing Asphalt Pavement	56,500	SY	$ 17.00	$ 960,500.00
		Full-Depth Asphalt Pavement (widening)	83,100	SY	$ 65.00	$ 5,401,500.00
		Subgrade Stabilization	83,200	SY	$ 11.00	$ 915,200.00
		2' - 6" Curb & Gutter	29,100	FT	$ 25.00	$ 727,500.00
		1' - 6" Curb & Gutter	14,700	FT	$ 20.00	$ 294,000.00
		Traffic Control	2.75	Mi	$ 150,000.00	$ 412,500.00
		Sidewalk	23,200	SY	$ 42.00	$ 974,400.00
		Concrete Monolithic Island, Suface Mounted	4,350	SY	$ 70.00	$ 304,500.00
		Thermo & Markers				
		-L- Length (6-Ln Divided)	2.75	Mi	$ 110,000.00	$ 302,500.00
		Erosion Control	20	ACR	$ 60,000.00	$ 1,175,826.00
		Traffic Signals				
		Gordon Rd & East of I-40 (Ramp Ent & Exit) - Upgrade	1	EA	$ 150,000.00	$ 150,000.00
		Gordon Rd @ Blount Dr - New	1	EA	$ 150,000.00	$ 150,000.00
		Gordon Rd @ Harris Rd - Upgrade	1	EA	$ 150,000.00	$ 150,000.00
		Gordon Rd @ White Rd - Upgrade	1	EA	$ 150,000.00	$ 150,000.00
		Gordon Rd @ Netherlands Dr - Upgrade	1	EA	$ 150,000.00	$ 150,000.00
		Gordon Rd @ US 17 - Upgrade	1	EA	$ 150,000.00	$ 150,000.00
		Construction Utilities				
		Lump Sum Estimate	1	LS		$ -
		Misc & Mob 15% Strs,Walls, Util Construction	1	LS		$ -
		Misc & Mob 45% Roadway	1	LS		$ 8,273,574.00

Lgth 2.75

Contract Cost ..... $ 26,658,000.00

E. & C. 15% ..... $ 4,042,000.00

Construction Cost ..... **$ 30,700,000.00**